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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,668	02/01/2000	Sergey A. Selifonov	3271.002US1	5158

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EXAMINER

KIM, YOUNG J

ART UNIT PAPER NUMBER

1637

DATE MAILED: 01/13/2003

31

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/495,668	SELIFONOV ET AL.	
	Examin r	Art Unit	
	Young J. Kim	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10,12-25 and 27-56 is/are pending in the application.
- 4a) Of the above claim(s) 31-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10,12-25,27-30 and 45-56 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>29,30</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Prosecution Application

The request filed on October 30, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/495,668 is acceptable and a CPA has been established. An action on the CPA follows.

Preliminary Remark

The cancellation of claims 11 and 26 are acknowledged.

Claims 1-10, 12-25, 27-30, and 45-56 are pending and are under prosecution.

Claims 31-44 remain withdrawn (from previous prosecution) for being drawn to non-elected invention with traverse (Paper No. 17).

Information Disclosure Statement

The IDS received on October 20, 2002 and the Supplemental IDS received on November 21, 2002, and the references listed in their corresponding PTO-1449 is acknowledged.

Specification

The disclosure is objected to because of the following informalities: There appears to be a typographical error on page 23, line 8 of the specification wherein the phrase recites, "joined subsequences are approximately *ore* exactly the length..."

Appropriate correction is required.

The specification is objected to by the Examiner because it makes reference to an URL on the internet. For example, line 5 of page 21 contains web-address. While information on web-address is accessible, the embedded hyperlinks and/or other forms of browser-executable code are impermissible and require deletion. The attempt to incorporate subject matter into the patent application by reference to a hyperlink and/or other forms of browser-executable code is considered to be an improper incorporation by reference. See MPEP 608.01(p), paragraph I regarding incorporation by reference.

If the subject matter which is improperly incorporated by reference is directed to nonessential material (illustrating the state of the art), the deletion will probably not be considered as new matter. However, if the subject matter which is improperly incorporated by reference is directed to essential material, applicant will be required to amend the specification to include the subject matter incorporated. The amendment must be accompanied by an affidavit or declaration executed by the applicant stating that the amendatory material consists of the same material incorporated by reference.

Claim Objections

Claim 1 is objected to because of the following informalities: Claim 1 appears to contain a typographical error:

Claim 1 recites, in sub-step (vi), the phrase, "selecting for production one or more product biological molecules," which appears to be grammatically incorrect. It appears that the phrase should recite, "selecting for production *of* one or more product biological molecules."

Appropriate correction is suggested.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10, 12-25, 27-30, and 45-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 17 and their dependents 2-10, 12-16, 18-25, 27-30, and 45-56 are indefinite for the recitation of the phrase, "concatenating said substrings to form one or more product strings ***about the same length*** as one or more of the initial character strings," because it is unclear what range of lengths is considered to be about the same length as the initial character strings.

Conclusion

The prior art neither teaches nor reasonably suggests the claimed method of encoding biological molecules into initial character strings from where substrings therein are selected and concatenated, producing recombined product biological molecules.

The prior art made of record in the previous Office Action (mailed on July 30, 2002) and not relied upon is considered pertinent to applicant's disclosure.

Sun (Journal of Computational Biology, 1999) disclose a mathematical model of DNA shuffling wherein random overlapping fragments are employed to generate a new product strand. However, Sun neither teaches or reasonably suggest the claimed method which require encoding

parent biological molecules into initial character strings from where substrings therein are selected and concatenated, producing recombined product biological molecules. Although the Sun reference disclose that "any full length reassembled molecule can be regarded as concatenation of random fragments," (pp. 81), Sun merely states a principle of DNA reassembly, i.e., the outcome of extending upon overlapping fragments, and does not motivate or suggest the actual concatenation or linking of sub-sequences of parent biological sequences. The term "concatenating," is in defined as, "to link together" (On line Merriam-Webster's Collegiate Dictionary, <http://www.m-w.com/>, see attached).

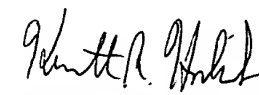
Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Young J. Kim whose telephone number is (703) 308-9348. The Examiner can normally be reached from 8:30 a.m. to 7:00 p.m. Monday through Thursday. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Benzion, can be reached at (703) 308-1119. Papers related to this application may be submitted to Art Unit 1637 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant does submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office. The Fax number is (703) 746-3172. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Young J. Kim

1/6/03




KENNETH R. HORLICK, PH.D
PRIMARY EXAMINER

1/8/03